

REMARKS

Claims 1-20 are pending in the application. Claims 6-10, 14-15 and 18-19 are withdrawn from consideration pursuant to an earlier restriction requirement. Thus, claims 1-5, 11-13, 16-17 and 20 are currently before the Examiner. Claims 1-5, 11-13, 16-17 and 20 have been amended.

Rejections Under 35 U.S.C. §112, second paragraph

Claims 3 and 16 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, claims 3 and 16 have been rejected because certain terms do not have sufficient antecedent basis.

Claim 3 has been amended to remove the wording "the laminated protective sheet". Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 3 pursuant to 35 U.S.C. § 112, second paragraph.

The Examiner has rejected claim 16 as having insufficient antecedent basis for the phrase "the protecting sheet". Applicant respectfully submits that claim 16 does not recite the phrase "the protecting sheet" but rather the phrase "the protective sheet". Applicant presumes that the Examiner intended to make this rejection based upon the wording "the protective sheet" and, accordingly, has amended claim 16 to delete this wording. Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 16 pursuant to 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. §102

Claim 1 stands rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,456,329 to Glenn (hereinafter "Glenn").

Applicant has amended independent claims 1, 2 and 11 herein to more clearly define the present invention. Claim 1, as amended, now recites that the semiconductor wafer protection structure comprises a circular semiconductor wafer and a circular protective sheet. Claim 2, as amended, now recites that the semiconductor wafer structure comprises a circular semiconductor wafer and a laminated circular protective sheet. Claim 11, as amended, now recites that the laminated protective sheet comprises a first circular protective layer and a second circular protective layer. Support for these amendments can be found in the specification, for example, on page 33, lines 18-24 and

page 34, lines 12-14. In addition, the original claims provide inherent support for the word "circular" because of the phrase: "...wherein the protective sheet has a larger diameter than the outer diameter of the semiconductor wafer" (emphasis supplied) found in claims 1 and 2 as filed. Accordingly, no new matter has been added.

The semiconductor wafer protection structure as recited in amended independent claims 1, 2 and 11 comprises a circular semiconductor wafer and a circular protective sheet overlaid on a circuit surface of the semiconductor wafer, wherein the protective sheet has a larger diameter than the outer diameter of the semiconductor wafer. Amendment to claims 1, 2 and 11 is made herein to clarify that the semiconductor wafer is circular, that the protective sheet is circular, and that the entire surface of the circular wafer can be covered with the circular protective sheet. As recited on page 10, lines 6-12 of the present application:

"The semiconductor wafer protection structures having the above constituents enable the wafers to be stored in a wafer cassette such that the end of the wafers 5 is prevented from direct contact with the cassette sidewalls. Thus, damage to the wafers can be prevented. That is, the end portion of the protective sheet functions as a cushion to protect the wafer 5."

In contrast to the amended claims of the present invention, Glenn discloses a semiconductor wafer protection structure as shown in Figures 3 and 5, having a semiconductor wafer (1) and a square protective sheet (26) overlaid on a circuit surface of the semiconductor wafer, wherein the protective sheet has a larger dimension than the outer diameter of the semiconductor wafer only in the diagonal direction. Accordingly, the semiconductor wafer protection structure of Glenn having a square protective sheet does not disclose or suggest a circular semiconductor wafer and a circular protective sheet (or a circular laminated protective sheet) overlaid on a circuit surface of the circular semiconductor wafer, wherein the circular protective sheet has a larger diameter than the outer diameter of the circular semiconductor wafer, as recited by Applicant's amended claims 1 and 2. Furthermore, the semiconductor wafer protection structure of Glenn having a square protective sheet does not disclose or suggest a laminated protective sheet for a circular semiconductor wafer comprising a first circular protective layer and a second circular protective layer, as recited by Applicant's amended claim 11.

In addition, Glenn discloses in Column 6, line 64 through Column 7, line 4:

"As shown in FIG. 3, when the first sheet 12 is adhered in place on the wafer 1, a second sheet 26 of material having an area sufficient to cover the first sheet is selected and trimmed so that its outline conforms to the periphery of the first sheet, particularly at the trimmed edges 16, 18, 20 and 22 of the latter, so that the ends of the saw-alignment scribe lines 5a, 5b remain visible when the second sheet overlays the first" (emphasis added).

Glenn further discloses in Column 9, lines 16-19:

"When the first sheet is adhered to the wafer, at least one end of at least one set of saw-alignment scribe lines on the face of the wafer is exposed at that edge of the first sheet" (emphasis added).

Accordingly, Glenn teaches that only a portion of the surface of the wafer is covered with a protective sheet. A portion of the end of the wafer is therefore not prevented from direct contact with the cassette sidewalls when the wafer is stored. Reconsideration and withdrawal of the rejection of claim 1 in view of Glenn is respectfully requested.

Claims 1, 2 and 11 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent Publication No. 2002/0001688 to Ueda et al. (hereinafter "Ueda").

The Examiner has asserted that Ueda discloses a semiconductor wafer (1) and a protective sheet (4) overlaid on the circuit surface of the semiconductor wafer, wherein the protective sheet has a larger diameter than the outer diameter of the semiconductor wafer. However, Applicant submits that the Examiner has mischaracterized element 4. Specifically, Applicant submits that element 4 of Ueda is actually a grinding stage of a grinding device and not a protective surface.

As stated in paragraph [0055] of Ueda:

"Concretely, when a sheet of resin composition 2 (hereinafter also referred to as 'resin composite sheet', both sides of which are protected with the releasing plastic films, is used as shown in FIG. 1, the releasing plastic film is peeled off from one side of the resin composite sheet 2, and thereafter, an active surface of a silicon wafer 1 having bumps 5 thereon is directly adhered to the peeled-off side of the sheet resin composition 2, and the other side still protected with releasing plastic film 3 is fixed on a grinding stage 4 of a

grinding device, and the silicone wafer 4 is subjected to back-grinding"
(emphasis added).

As shown in Figure 1 of Ueda, the dimensions of the protective releasing plastic film are the same size as the dimensions of the semiconductor wafer.

Accordingly, Applicant submits that Ueda does not disclose or suggest a semiconductor wafer protection structure comprising a circular semiconductor wafer and a circular protective sheet as recited by amended claim 1, a semiconductor wafer structure comprising a circular semiconductor wafer and a laminated circular protective sheet as recited by amended claim 2, or a laminated protective sheet comprising a first circular protective layer and a second circular protective layer as recited by amended claim 11. Reconsideration and withdrawal of the rejection of claims 1, 2 and 11 in view of Ueda is respectfully requested.

Rejections Under 35 U.S.C. §103

Claims 3-5, 11-13, 16-17 and 20 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable in view of Ueda.

Claim 3 depends directly from independent claim 1, and has been amended to provide proper antecedent basis for the terms "circular semiconductor wafer" and "circular protective sheet". Claims 4-5 and 16-17 depend either directly or indirectly from independent claim 2, and have been amended to provide proper antecedent basis for the terms "circular semiconductor wafer", "first circular protective layer", "second circular protective layer", and "circular laminated protective sheet", where applicable. Claims 12-13 and 20 depend directly or indirectly from independent claim 11, and have been amended to provide proper antecedent basis for the terms "a circular semiconductor wafer", "first circular protective layer", and "second circular protective layer".

In view of the above remarks and amendments to claims 3-5, 11-13, 16-17 and 20, Applicant respectfully requests reconsideration and withdrawal of the rejection in view of Ueda.

Summary

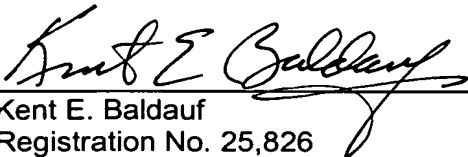
Applicant respectfully submits that the presently claimed invention is patentably distinct over the above-identified prior art of record and that claims 1-5, 11-13,

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16-17 and 20 are in condition for allowance. The Examiner's reconsideration and favorable action with respect to claims 1-5, 11-13, 16-17 and 20 are respectfully requested.

Respectfully submitted,
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